



Midwives' perception of the intrapartum risk of healthy nulliparae in spontaneous labour, in The Flanders, Belgium

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Abstract

Objective: to explore midwives' perception of intrapartum risk for healthy nulliparous women in spontaneous labour at term of a healthy singleton pregnancy, in the Belgian Flanders, and to compare these results with those of a previous study undertaken in England.

Design: survey of the care midwives would advocate and their perception of intrapartum risk using a standardised scenario. This study replicates part of a survey undertaken with British midwives (Mead & Kornbrot 2004b). With an added section to capture the particulars of the Belgian situation and explore the likelihood of midwives being fully responsible for the whole intrapartum care of healthy women, including their delivery. The questionnaire was translated into Dutch by MR and distributed by the Flemish Midwives' Association (Vlaamse Organisatie van Vroedvrouwen—VLOV).

Participants: all 845 midwives and 143 student midwives who were members of VLOV were sent a questionnaire with their invitation to take part in their annual conference. Two hundred and seventy-five midwives and 107 students attended the conference, and 128 questionnaires were returned at the conference: 99 midwives (36% of the attendees), 26 students (24% of attendees), with three unidentified respondents. This convenience sample represented 12% of all midwives and 18% of all students.

Analysis: SPSS for Windows was used for the statistical analysis. Descriptive statistics were used and differences between categorical variables were analysed using χ^2 and Fisher's Exact tests, and differences between continuous variables were analysed by analysis of variance.

Findings: midwives generally described a more medicalised approach to intrapartum care on admission and during the first stage of labour than their British counterparts, but were much more optimistic about the chances of healthy women in spontaneous labour achieving a normal delivery within 12 hours. However, Belgian midwives had only a limited ability to undertake normal deliveries because of the high proportion of obstetricians who fulfil this responsibility. This contravenes the European Union (EU) directive on the activities of the midwife.

Key conclusions: despite much greater involvement of obstetricians in the care, of women suitable for full midwifery care, and a more medicalised approach to intrapartum care, the Belgian Flanders have a significantly lower caesarean

section rate than the UK. The inability of Belgian midwives to fulfil the activities of the midwives as identified by the EU directives raises questions about the migration of midwives trained in Belgium to other EU member states.

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Introduction

A previous study undertaken in the UK revealed that midwives underestimated the ability of healthy nulliparous women in spontaneous labour at term to progress normally, but overestimated the benefits of interventions, particularly epidural analgesia (Mead & Kornbrot, 2004a, b). Replication of studies, particularly where health systems vary, is desirable if initial findings are to be more widely generalised. An invitation to speak at a midwifery conference in the Flanders, Belgium, was therefore seen as an ideal opportunity to replicate the study in this country. Midwifery is a well-established profession in the UK. However, but the picture varies significantly in the rest of Europe despite European directives aimed at ensuring that midwives are at least able to undertake a list of activities, including the intrapartum care of healthy women (European Midwives Liaison Committee, 1996). Previous surveys have shown that Belgian midwives struggle to achieve the minimum level of midwifery activity that European Union (EU) member states must ensure midwives are at least entitled to undertake (European Parliament & European Council, 2005), particularly in the area of intrapartum care (European Midwives Liaison Committee, 1996; Emons and Luiten, 2001). This may be partially explained by a much higher rate of obstetricians. However, paradoxically this situation is also associated with a lower caesarean section rate: 17.8% for singleton pregnancies in The Flanders (Cammu et al., 2005) compared with an overall rate of 22.7% in England (Government Statistical Service, 2005) in 2004. However, despite being lower, the Belgian caesarean section rate is also rising. The previous study demonstrated that midwives had a higher perception of risk than actual data would support. Given that midwives probably play an important role in monitoring labour and summoning medical aid when they believe a deviation of the norm has occurred, it would be useful to examine midwives' risk perception for health women in other countries.

This study was therefore undertaken to replicate the initial study undertaken in the UK and measure midwives' perception of the intrapartum risk of healthy nulliparous women in spontaneous labour in

the Belgian Flanders. We also aimed to identify the extent to which Flemish midwives are able to provide complete intrapartum care.

Methods

An extensive questionnaire, based on a standardised scenario of a healthy 24-year-old nulliparous woman in spontaneous labour at term (39+ weeks) with a healthy singleton pregnancy, had previously been developed in the UK to compare midwives' perception of intrapartum risk for healthy nulliparous women in higher and lower intervention units (Mead and Kornbrot, 2004b). The questionnaire consisted of two main parts: (1) a description of the practice of midwives; and (2) the perception of intrapartum risks on admission and in labour, given the following alternative options: no intrapartum intervention, artificial rupture of membranes (ARM), use of electronic fetal monitoring or epidural. Three versions of the same scenario were identified: (1) the mother does not have a birth plan and relies on the midwife to make the most appropriate decisions for her care; (2) the mother has a birth plan and wishes labour to progress as naturally as possible without intervention; and (3) the mother has a birth plan and wishes to avail herself of all recent technological developments. The part of the questionnaire relating to the description of practice aimed to identify what the midwives would do, what they thought their colleagues would do, and what their guidelines and protocols recommended at the point of admission and during the first stage of labour. Midwives systematically reported that their personal practice was more liberal than that of their colleagues, but the only items of care that varied significantly between the three versions of the scenario were the use of fetal monitoring and epidural. These were reported statistically more frequently for the mother who wished to use all recent technologies (Mead and Kornbrot, 2004b).

The elements of the initial questionnaire that related to midwives' personal clinical choices and perception of risk were selected for this new study, with only one scenario option: the mother relies on the midwife to advise on the most suitable care.

This took into consideration observations undertaken on admission and during the first stage of labour (temperature, pulse, blood pressure and urinalysis), as well as information about intrapartum care (nutrition in labour, use of vaginal examinations and methods of fetal monitoring). The second part of the questionnaire dealt with midwives' perception of risk on admission and during labour, focusing specifically on maternal observations, fetal presentation, birth weight, length of labour, fetal oxygenation, use of epidural analgesia and method of delivery, given three distinct situations: no intervention, ARM only and epidural analgesia.

Finally, the questionnaire asked respondents to identify their status (registered midwife or student), length of qualification and area of practice. Because of the difficulties known to be experienced by midwives in Belgium ([European Midwives Liaison Committee, 1996](#)), a small section was added asking midwives to quantify the number of women in labour they had looked after in the previous 2 months and the number of births they had undertaken during that period. Where midwives had not delivered any babies, they were asked to identify the reason why. One of the options included 'obstetricians do all the deliveries'. Where the information was available in the Flemish annual report on maternity services ([Cammu et al., 2005](#)), comparisons of perception and overall audited figures were made.

Specific funding was not available for this study; however, the VLOV bore the cost of translation and administration of the survey. MR translated the English questionnaire into Dutch, and it was then distributed by the VLOV to all midwives and students who were planning to attend the conference, where the completed questionnaires were collected.

The data were coded and entered on SPSS for Windows, version 11.0. Frequencies, Pearson χ^2 and two-sided Fisher's Exact tests were used for the analysis of the categorical data, and analysis of

variance (ANOVA) for the comparison of means. Statistical significance was set as $p < 0.05$.

Findings

Background of respondents

At the time of the conference, the VLOV had a membership of 845 midwives and 143 student midwives. Two hundred and seventy-five midwives and 107 students, representing about one-third of the VLOV membership, attended the conference. One hundred and twenty-eight questionnaires were returned at the conference: 99 midwives (36% of the attendees), 26 students (24% of attendees); three respondents who did not identify whether they were qualified midwives or students. Most midwives (75/99) worked in a maternity unit, 12 were both employed and self-employed, four were self-employed and eight were midwife teachers. All but one student were in their third and final year of study. The number of years of practice for the registered midwives varied between 0 and 35 years (mean 12.6 years; SD 9.5 years). The number of births in 2003 in the units of the respondents varied between 28 and 4200 (mean = 1011 deliveries; SD 710 deliveries). The number of midwives per unit varied between four and 70 (mean = 27; SD 13.5 midwives) and that of obstetricians between two and 30 (mean = 7 obstetricians; SD 5.5 obstetricians). These figures show wide variations in the practices of the respondents, in relation to background and type of maternity unit.

Admission

Observations such as temperature, pulse, blood pressure and urine testing were undertaken. However, significant differences were found in the practices of students and qualified midwives for observations of pulse, proteinuria and glycosuria.

Table 1 Difference in the rate of admission observations between staff and students.

	Staff (%)	Students (%)	χ^2	<i>p</i>
Temperature	48	65	2.354	0.125
Pulse	54	80	5.673	0.017
Blood pressure	97	100	0.842	0.349
Proteinuria	44	81	11.257	0.001
Glycosuria	25	69	18.143	<0.001
Ketonuria	11	21	1.791	0.181
Addominal palpation	84	96	2.381	0.123

We also found that students were more likely than midwives to make all observations, except that of blood pressure (Table 1). On admission, the respondents were far more likely to use an electronic form of fetal monitoring than either a fetal stethoscope a hand-held Doppler, or both (108/122–89% vs. 14/122–11%). Of those who recommended the use of electronic fetal monitoring, 30 min was the favoured length of time, recommended by 61% of the registered midwives and 57% of the students. The differences in the use of cardiotocography (CTG) were not significant between qualified midwives and students.

Most of the respondents reported that they would carry out an abdominal palpation (106/122–87%) and use an admission CTG rather than use a hand-held Doppler or fetal stethoscope (108/122–89%). A 30-min admission unit CTG was the favoured length. Most of respondents would inform the medical staff of the labour admission (98/122, 80%). The differences between qualified staff and students on these three items were not significant.

Intrapartum care

Respondents were then asked what maternal observations they would undertake during the first stage of labour. A distinction was offered for the observation of the maternal temperature when membranes are intact, ruptured spontaneously or artificially. Observation of the temperature was more likely to be undertaken with spontaneous rupture of membranes than artificial rupture, and less than two-thirds of the respondents would measure the blood pressure on a regular basis. Students were again more likely to make some of the observations than qualified midwives, and significantly so for the temperature in the event of an artificial rupture of membranes (ARM), pulse and blood pressure (Table 2).

Nutrition during labour for healthy women in spontaneous labour was then investigated. A number of alternatives were offered, from nil by mouth to normal meal. These nutrition categories could be summarised into 'Nil by mouth', 'drinks only' and 'food'. The analysis of these recoded variables showed that only three respondents (2.4%) would opt for the 'nil by mouth' alternative, 76 (59.8%) for any type of drink and 48 (37.8%) for any type of food. Students were far more conservative than their qualified colleagues. Only 19% of them were prepared to allow any solid food, whereas 42% of the qualified midwives reported allowing solid food for healthy nulliparous women in spontaneous labour ($\chi^2 = 4.721$, $df\ 1$, $p = 0.040$).

Most respondents (95/125–76%) favoured intermittent electronic monitoring, followed by the hand-held Doppler (26/125, 22%). Only three respondents would have favoured continuous CTG and only one the exclusive use of the fetal stethoscope. No significant differences were found between qualified and student midwives.

Respondents were asked whether they would undertake vaginal examinations to assess the progress of labour on a regular basis or as and when they judged it necessary. Most opted to undertake vaginal examinations 'when necessary' option. The most common frequency of the respondents who favoured regular vaginal examinations was 2 hours (14/24–58%), followed by every hour; only two respondents (13%) favoured vaginal assessments every 3 h. For respondents opting for vaginal assessments 'when necessary', the same proportion (54/89–61%) identified that, on the whole, vaginal assessments were undertaken every 2 h; 23 respondents (26%) thought that a vaginal assessments every 3 h would be required; seven respondents thought that assessments would be required every hour; four respondents, every 4 h, and only one midwife thought that assessments would be required every 6 h. The differences

Table 2 Frequency of labour observations.

Observation	Frequency	%	Midwives (%)	Students (%)	Fisher's Exact test <i>p</i>
Temperature					
Membranes intact	8/125	6	8	0	0.166
Spontaneous rupture	63/124	51	51	71	0.140
Artificial rupture	56/124	45	48	67	0.038
Pulse	24/126	19	13	40	0.004
Blood pressure	75/127	59	51	92	<0.001
Proteinuria	4/125	3	3	4	1.000
Glycosuria	2/125	2	1	4	0.353
Ketonuria	3/125	2	1	8	0.097

between qualified midwives and students were not significant.

For most respondents (108/127–85%), an ARM was sometimes an augmentation of labour: for 18 out of 127 (14%) an ARM was sometimes an augmentation of labour; and for one respondent an ARM was never an augmentation of labour. The students were slightly more likely to regard an ARM as always being a form of augmentation of labour (19% vs. 13%), but the differences were not significant.

Most respondents (106/125–85%) thought that a minimum cervical dilatation ought to be reached before an ARM could be carried out. The most common dilatations identified as the minimum to be reached were 3 (32%), 4 (27%) and 5 cm (18%), a cumulative frequency of 84% at this dilatation. To the question of whether an ARM should be carried out once a particular cervical dilatation had been reached, 35/125 (28%) responded positively. Only seven of the 29 respondents who identified a dilatation suggested 3 or 4 cm; three respondents each opted for 7 and 8 cm, five for 9 cm and 16/29 (55%) for full dilatation, a median of 9.5 cm.

Respondents were then asked if there was a particular cervical dilatation that ought to be reached before an epidural could be sited. Only 20/124 (16%) responded positively. The minimal cervical dilatation ranged from 0–10 cm, with a median measurement of 5 cm. Most midwives believed that women who had an epidural should have continuous monitoring (110/125–88%). No

significant difference was found between registered midwives and students.

Midwives' perception of risk

The second part of the questionnaire asked respondents to identify the risk of specific outcomes given specific situations: in a scenario where 100 healthy nulliparous women were admitted to hospital in spontaneous labour at term of a healthy singleton pregnancy, midwives were asked what the outcome would be if (1) no intervention was made; (2) if an ARM was carried out; (3) if a CTG was carried out; (4) if an epidural was used; or if a combination of all the last three were carried out.

Admission

For the admission, respondents were asked what percentage of women would have a temperature below 37.5 °C, a pulse ranging from 60–100 beats per min, a diastolic blood pressure below 90 mmHg, proteinuria ++, ketonuria, cephalic, breech or transverse presentation, an engaged fetal head, a baby weighing between 3 and 4 kg as well as below 3 kg and above 4 kg, a normal, slightly abnormal or highly abnormal CTG, spontaneous ruptured membranes and, if so, meconium stained liquor.

A summary of the findings with the mean and median for each result is presented in Table 3. The median for each measurement is given because the results are not normally distributed. Where

Table 3 Risk perception on admission: descriptive statistics (%).

	<i>n</i>	Mean	Median	SPE 2004*
Admission: T° < 37.5°	126	82	90	
Admission: pulse 60–100bpm	126	85	90	
Admission: diastolic < 90 mmHg	127	83	85	
Admission: protein ++	123	19	10	
Admission: ketonuria	115	12	5	
Admission: cephalic	127	90	91	95.1
Admission: breech	127	8	7	4.6
Admission: transverse lie	127	2	1	0.3
Admission: head engaged	125	69	75	
Birth weight 3000: 4000 g	127	71	70	68.9
Birth weight < 3000 g	127	17	15	22.1
Birth weight > 4000 g	127	12	10	8.8
Admission CTG: normal	127	79	80	
Admission CTG: slightly abnormal	127	17	15	
Admission CTG: very abnormal	127	5	5	
Admission: spontaneous RM rupture of the membrane	125	35	30	
Admission: meconium stained liquor	125	9	5	

*SPE for birthweight > 500 g

possible, the figures provided by the Flemish Epidemiology centre is also given to provide a comparison of the risks with the reality of the clinical situation. It is important to note that the SPE figures deal with the overall figures rather than the details of healthy women in spontaneous labour at term of a singleton pregnancy.

As in the previous UK study (Mead & Kornbrot, 2004b), midwives estimated the expected birth weight correctly, but overestimated the likelihood of breech presentation or transverse lie. However, it is unlikely that 18% of these healthy nulliparous women would have a temperature higher than 37.5 °C, or that 15% would have a pulse either below 60 bpm or above 100 bpm. It is also extremely unlikely that 16% of these healthy women would have a diastolic blood pressure higher than 90 mmHg. Similarly, when membranes are intact, it is highly unlikely that 19% of these women would have ++ proteinuria. The actual rate of breech presentation for all pregnancies, including preterm deliveries, was identified at 4.6% (Cammu et al., 2005), but was perceived to be about 8% by the respondents.

On admission, it is unlikely that one-fifth of these healthy women would have a slightly (16.4%) or very abnormal CTG (4.4%). Indeed, several previous studies on home births or on the outcome of low risk labour suggest that the proportion of babies who develop fetal hypoxia during labour does not reach 10% (Anderson and Murphy, 1995; Arya et al., 1996; Olsen, 1997; Janssen et al., 2002). The proportion of meconium stained liquor is not usually reported in the published literature; however, its overall rate during labour often reaches 13–16% (Maymon et al., 1998). The rate recorded by these respondents on admission was 8.8%.

Midwives' perception of risk for the first stage of labour

Respondents were asked to assess the proportion of women who would have (1) a spontaneous rupture of membranes on admission; (2) delivered with 6, 7–12, 13–18 or more than 18 h; continuous electronic fetal monitoring by the time of delivery; (3) asked for a delivery; (4) normal, slightly abnormal or very abnormal levels of fetal oxygenation; (5) meconium-stained liquor; and (6) a spontaneous vaginal delivery, forceps or vacuum extraction or emergency caesarean section.

The results for the three scenarios are summarized in Table 4. An ARM and an epidural were associated with a slight increase in the perception that women would be more likely to deliver within 12 hours. Mild and severe fetal hypoxia were perceived to increase slightly in the event of an epidural. This intervention was also associated with a slight increase in the mean rate for operative vaginal deliveries and caesarean sections, but the median measurements demonstrated that at least half the respondents did not perceive any risk increase. The rate of continuous CTG was already high at 53% in the 'no intervention' and 56% in the 'ARM' scenario, but it increases considerably and reaches a mean of 90%, and a median of 100% for the epidural scenario. Indeed 93% of respondents stated that the use of continuous CTG was unit policy once an epidural had been sited.

Midwives' and student midwives' perception of risk

Several significant differences in risk perception were observed among midwives and student mid-

Table 4 Risk perception during first stage of labour ($n = 120$ – 127).

	No intervention		ARM		Epidural	
	Mean	Median	Mean	Median	Mean	Median
ARM	62	65				
Delivery within 12 hours	77	80	83	89	83	87
Continuous CTG	53	60	56	60	90	100
Requesting an epidural	63	65	69	70		
Normal oxygenation	82	85	78	80	75	76
Mild hypoxia	13	10	16	15	19	18
Severe hypoxia	4	3	5	5	6	5
Meconium stained liquor	12	10	14	10	14	10
Normal delivery	81	81	78	80	69	70
FD/VE	14	10	16	15	23	20
Emergency caesarean section	5	5	6	5	8	5

ARM, artificially ruptured membrane; CTG, cardiotocography; FD/VE.

Table 5 Midwives' and student midwives' differences in risk perception.

Risk	Midwives	Students	<i>p</i> *
Admission CTG: normal	82	67	<0.001
Admission: meconium	8	13	0.022
No intervention: continuous CTG	50	69	0.003
No intervention: normal fetal oxygenation	84	73	<0.001
No intervention: meconium	11	16	0.019
No intervention: normal delivery	83	74	<0.001
ARM: delivery within 12 hrs	85	77	0.035
ARM: continuous CTG	51	76	<0.001
ARM: epidural request	68	75	0.041
ARM: normal fetal oxygenation	81	69	<0.001
ARM: normal delivery	80	69	<0.001
Epidural: delivery within 12 hrs	84	77	0.030
Epidural: normal fetal oxygenation	78	67	<0.001
Epidural: meconium stained liquor	13	18	0.033
Epidural: normal delivery	71	63	0.008

*Comparison of means by ANOVA.

wives. The students were systematically more pessimistic than the qualified midwives about both maternal and fetal outcome. For the admission scenario of this healthy woman in spontaneous labour, they were less likely to anticipate a normal CTG, but more likely to anticipate meconium stained liquor. Where the scenario proposed the progress of labour without intervention, they were more likely to suggest continuous electronic fetal monitoring, and less likely to think that fetal oxygenation would be normal or that the mother would proceed to a normal delivery. Similar differences were found for the ARM and the epidural scenarios (Table 5).

Midwives' labour and delivery practice

Most respondents had labour ward experience in the 2 months preceding the survey, looking after between one and two women, to more than 20 women. However, they had limited experience of assisting the mother at the birth: 43/83 respondents did not undertake a single delivery during the previous 2 months and identified that, where this was the case, obstetricians routinely took over the care of the women at the point of delivery (Table 6). This was the case for only one of the 15 students who looked after women during labour in the 2 months preceding the study. The Spearman correlation coefficient between intrapartum care and delivery was $r = 0.100$ for qualified midwives and $r = 0.791$. This would suggest a potentially limited level of clinical experience whereby students

observe or assist midwives undertaking normal deliveries.

The annual rate of deliveries in the various maternity units did not affect the proportion of deliveries that qualified midwives could undertake. These results suggest that the midwives who cared for a greater number of women were slightly more likely to deliver a smaller number of babies, but this may be associated with the inevitable deliveries occurring before an obstetrician can arrive on the scene rather than with a policy of enabling midwives to undertake the activities of the midwife as defined by the European Directives (European Parliament and European Council, 2005).

Discussion

An invitation to speak at a Belgian midwives' conference provided the opportunity to replicate part of an earlier study on midwives' intrapartum risk perception (Mead & Kornbrot, 2004b). The limited time and the absence of funding forced the use of a convenience rather than a random sample and all midwives, and students attending the conference were targeted. The information on the midwives' perceived risks were compared with the actual data of healthy nulliparous women in spontaneous labour at the end of a normal singleton pregnancy in the UK, but with overall data for the Flemish data. This approach and the response rate suggest that some care must be exercised in the interpretation and the generalisation of the findings.

Table 6 Number of deliveries compared with intrapartum care for midwives and student midwives.

Deliveries		Labour						Total
		1–2	3–5	6–10	11–15	16–20	> 20	
Midwives	None	1	7	10	13	1	11	43
	1–2	1	3	4	6	4	8	26
	3–5		1	4	2		2	9
	6–10			1	1	1	1	4
	11–15							
	16–20							
	> 20						1	1
	Total	2	11	19	22	6	23	83
Students	None		1					1
	1–2	1	2					3
	3–5			1	1	1		3
	6–10				2	2		4
	11–15				1	2	1	4
	16–20							
	Total	1	3	1	4	5	1	15

Despite these limitations, there were some striking similarities between some aspects of the English and the Belgian studies, and, in particular, for the perception of risk on admission or during the first stage of labour. Midwives in both countries had a relatively accurate prediction for birth weight, but generally overestimated the likelihood of several abnormalities (e.g. temperature $>37.5^{\circ}\text{C}$ on admission, diastolic blood pressure $\geq 90\text{ mmHg}$, breech presentation). However, the Belgian midwives were much more optimistic about some labour outcomes than their British counterparts. Depending on the scenarios, 77–83% of the Belgian respondents thought that labour would not last more than 12 hours, whereas, in the 'lower intervention' British units, the most optimistic rates varied between 59–76%. The Belgian midwives also varied considerably from their British colleagues in estimating that delivery within 12 hours was more likely with either ARM or epidural. Midwives in the UK were more likely to think that an ARM would be associated with a shorter labour, but a longer labour if an epidural was used. In this case, the differences between the two countries were striking: 83% of Belgian midwives thought delivery would have been concluded within 12 hours, compared with only 59% in 'lower intervention' and 54% in 'higher intervention' units in the UK. The actual times were not available for the Belgian maternity units. However, if the length of labour is relatively similar in the two countries (i.e. 71% of nulliparous women who had epidural delivered within 12 h of the onset of labour), this

would suggest that this risk perception was over optimistic in Belgium but over pessimistic in the UK.

The Belgian midwives were also much more optimistic about the chances of women achieving a normal delivery, although they identified a slight reduction in the event of an ARM or an epidural (no intervention: 80%; ARM: 78%; epidural: 69%). This was in marked contrast to the results of the British study (72%, 71% and 57% in the 'lower intervention' units respectively). The overall risk perception for caesarean section rates varied between 5 and 8% in Belgium, and between 12 and 14% in the UK, demonstrating again a much more optimistic risk appreciation by the Belgian midwives. However, the actual caesarean section rate in the SMMIS data for healthy nulliparae in spontaneous labour at term varied between 1% (no intervention), 2% (ARM) and 20% (epidural). It is difficult to gain access to precise and comparable national statistics on the outcome of spontaneous labour of healthy nulliparous women at term, because statistics are not usually collected on that basis (Macfarlane, 1998) and direct comparison with the Belgian figures was not easily available. However, it is worth noting that the overall rate of caesarean section is lower in Belgium: 17.8% compared with 22.7% in England (Government Statistical Service, 2005), even though the elective caesarean section is similar in both countries at 10.5% and 9.6%. It is, therefore, the emergency caesarean section rates that vary substantially, from 7.2% in The Flanders to 13.1% in the UK (Cammu et al., 2005; Government

Statistical Service, 2005). This situation is paradoxical because the health services organisations differ considerably between the two countries, with a much higher use of the private sector in Belgium (Cammu et al., 1998). In the UK study, women accessing the private sector had a much higher elective caesarean section rate than their NHS counterparts, but the emergency caesarean section rates did not differ if labour had been spontaneous (Mead, 2001).

Belgium has a compulsory health-care system based on the social health-insurance model. A comprehensive benefit package is available to 99% of the population through compulsory health insurance. Health care is publicly funded, but mainly privately provided. Patients have free choice of provider, hospital and sickness fund. Reimbursement by individual sickness funds depends on the nature of the service, the legal status of the provider and the status of the insured person (WHO Regional Office for Europe, 2005a,b). Belgians have direct access to specialist services, whereas the UK uses a gatekeeper system manned by GPs to filter access to the secondary health-care system (Verhaak et al., 2004). The number of obstetricians varies significantly with 1/297 deliveries in the UK and 1/78 deliveries in the Flanders in 2000 (Cammu et al., 1998; WHO Regional Office for Europe, 2005a,b). Belgian obstetricians and gynaecologists work both inside and outside the hospital set-up, and most women will visit a gynaecologist for services normally provided by general practitioners in the UK (e.g. family planning and cervical smears). Medical practitioners tend to be self-employed and paid by patients according to items of activity. Patients are reimbursed for some or their whole contribution, depending on the nature of consultation, investigation or treatment. When a woman who has regularly consulted a particular gynaecologist becomes pregnant, she will more naturally access that specialist for antenatal, labour and postnatal care. Specialist doctors in Belgium are therefore much more involved in the care of healthy women than in the UK, where women would be expected to access a midwife rather than an obstetrician, and where primary care covers areas of activities often covered by obstetricians in Belgium (e.g. cervical screening or mammography). These factors partially explain how access to obstetric care is much more likely to be via the private sector in Belgium than in the UK. However although private patients were much more likely to have a caesarean section in the UK (Mead, 2004), this was clearly not the case in Belgium at the time of the study.

The organisation of the health-care system provides a financial incentive that may encourage obstetricians to undertake activities that could be carried out by midwives. Indeed, more than 94% of deliveries are undertaken or supervised by an obstetrician in Belgium (Cammu et al., 2005). This is clearly not associated with untoward pregnancy outcomes in Belgium, but the high use of specialist medical services has an important effect on the role of the midwife (European Midwives Liaison Committee, 1996), and therefore on the experience of student midwives. This must be a concern for other EU states if Belgian midwives wish to migrate within the EU. In this study, the number of deliveries undertaken by midwives did not match the number of women these midwives had cared for in labour. This was not the case for students, suggesting that, during their training, Belgian students are 'allowed' to deliver the babies of the women they have cared for during labour. The fact that a large number of deliveries are not undertaken by midwives when they have cared for the women in labour would suggest that the students are not able to observe the full extent of midwifery practice. In line with the above, the statistically significant differences between the perception of intrapartum risk for healthy women in spontaneous labour between qualified midwives and students suggest some concern. Students were systematically less liberal in their approach to the care of healthy women in spontaneous labour and more pessimistic about the chances of positive outcomes during the labour of a healthy woman in spontaneous labour at term. This would suggest that the students might not fully benefit from the knowledge of qualified midwives who seemed to be more optimistic about the physiology of labour.

Previous research has shown that that Belgian midwives are less likely than their British colleagues to provide full antenatal and intrapartum care for healthy women. This situation clearly contravenes the principles of the EU directives on the activities of the midwife that all EU member states must comply with. In particular, the Directive specifies that:

States shall ensure that midwives are at least entitled to take up and pursue the following activities: [...] 5. to care for and assist the mother during labour and to monitor the condition of the foetus in utero by the appropriate clinical and technical means; 6. to conduct spontaneous deliveries including where required an episiotomy and in urgent cases a breech delivery

(European Parliament & European Council, 2005).

Despite these differences, Belgian midwives share the same desires as many of their international colleagues, and struggle to be able to provide midwifery care to healthy women throughout their pregnancy (UPAB, 2005; VLOV, 2005).

Conclusions

This replicated study highlighted some similarities and some major differences in the delivery of care and in the midwives' perception of risk for intrapartum care and outcomes of healthy nulliparous women at term and in spontaneous labour. An increased medicalisation of childbirth is not associated with an increased level of negative outcomes (i.e. caesarean sections), even though both countries continue to report a steady rise. Further studies on midwives' perception of risk will be undertaken in other EU member states to describe intrapartum midwifery practice and identify, where possible, any potential links between risk perception and practice.

This study also shows that Belgian midwives face significant difficulties in being able to fulfil their role. Evidence suggests that good midwifery practice benefits women (Oakley et al., 1995; de Veer and Meijer, 1996; Fullerton et al., 1996; Oakley et al., 1996; Tucker et al., 1996; Law and Lam, 1999), but accepting that midwives should be encouraged to practise to the full extent of their professional role is not always easy (Blais et al., 1994; Cheyne et al., 1995; de Veer and Meijer, 1996; Fullerton et al., 1996; Gau et al., 2002; Hyde and Roche-Reid, 2004). The evidence from the study suggests that it is imperative for midwives to use the European legislation to ensure that Belgium, a member state of the EU, implements the full the EU Directive on the activities of the midwife (European Parliament and European Council, 2005).

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